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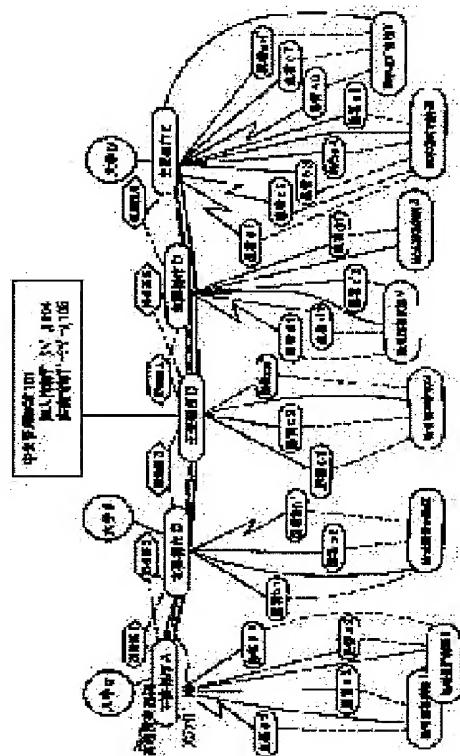
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(54) DOMICILIARY TREATMENT MANAGEMENT SYSTEM

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a useful domiciliary treatment management system that keeps track of and manage conditions of patients in real time and presents appropriate guidelines so as to allow safe, convenient and long-term domiciliary disease treatment such as dialytic treatment.

SOLUTION: The domiciliary treatment management system comprises treatment apparatuses, regional examination facilities, a central management facility, and an information communication network connecting them, and has medication



means, detection means to detect symptoms, primary storage means, transmission and reception means, setting change means, evaluation parameter computation means, treatment monitoring means, and further has treatment apparatuses that can be installed at homes, relay transmission and reception means, secondary storage means, medical instruments, regional examination facilities with input and output terminals, transmission and reception means, evaluation parameter computation means, personal information databases, disease information databases, condition judgment expert subsystems, treatment program preparation subsystems, and treatment program approval means.

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CLAIMS

[Claim(s)]

[Claim 1] It is the domiciliary treatment managerial system which consists of an information communication network which connects them to a treatment device, a local medical-examination facility, and a central-control facility. While transmitting a medication means to medicate a patient with drugs on the directed conditions, a detection means to detect the symptom at the time of medication, a primary storage means to store with the treatment conditions on which detection data were directed serially, and the stored detection data A transceiver means to receive the directions information from a local medical-examination facility etc., a setting-out modification means to change setting out of a medication means etc. based on the directions information from a local medical-examination facility, An assessment parameter calculation means to compute the assessment parameter by which a therapy situation is evaluated based on the various detection data stored in the primary storage means, Had at least the therapy monitor means which emits an alarm etc. when an assessment parameter judges whether it is within the limits of predetermined and becomes out of range. The treatment device which can be installed in a home, and said local medical-examination facility While connecting with always thru/or at any time through said treatment device and wireless thru/or a general public line, etc. A junction transceiver means to deliver the directions information data from a central-control facility etc. to each patient's dialysis device while always connecting with a high-throughput telecom network and delivering the received various detection data information to a central-control facility, It has at least the secondary-storage means which carries out filing storing of the information received from each treatment device thru/or a central-control facility according to an individual, the medical equipment for performing a diagnosis of a patient, etc. to this medical equipment While being able to ***** a opinion for said secondary-storage means, said

junction transceiver means is minded. The input/output terminal which can transmit this opinion information to each patient's dialysis device thru/or central-control facility, or can peruse the various information stored in the central-control facility is prepared. Furthermore, a transceiver means by which said central-control facility transmits and receives information between said local medical-examination facilities through a high-throughput telecom network, An assessment parameter calculation means to compute an assessment parameter etc. based on this receipt information, The personal data base which carries out filing storing of the inspection information of the individual containing these calculation data with the medical-examination information about past treatment hysteresis, a past opinion, etc., The condition judging EKUSU PERT subsystem which judges a patient's condition based on the necessary individual humanity news and the disease information which were pulled out from the disease information database which accumulated the information about a predetermined disease, and these databases, The management programming subsystem which creates a future management program based on a judgment result, When this management program is outputted to the terminal of the right person of acknowledgement and an acknowledgement input is obtained from this ** person, this management program is determined. The domiciliary treatment managerial system characterized by having at least a management program acknowledgement means to output the necessary command to a related device etc. according to the management program this determined while adding a postscript to the treatment hysteresis of a personal data base.

[Claim 2] It is the home peritoneal dialysis therapy managerial system which consists of an information communication network which connects them to a peritoneal dialysis device, a local medical-examination facility, and a central-control facility. Said peritoneal dialysis device A dialysing fluid feeding-and-discard means to have the function which pours in dialysing fluid and is discharged after predetermined time progress on the conditions possible [at a home] and directed, An amount detection means of effluents to detect the amount of effluents discharged from the abdominal cavity, a concentration detection means to detect the concentration of the various components in an effluent, The input/output terminal which can input the personal data about a patient or can peruse the various information to need, A primary storage means to store said various detection data and personal data with dialysing fluid feeding-and-discard data, A transceiver means to receive the directions information from a local medical-examination facility etc. while transmitting the stored data to a local medical-examination facility etc., A setting-out modification means to change setting out of a dialysing fluid feeding-and-discard means etc. based on the directions information from a local medical-examination facility, An assessment parameter

calculation means to compute an assessment parameter based on the various detection data stored in said primary storage means, It has at least the dialysis monitor means which emits an alarm etc. when each assessment parameter judges whether it is within the limits of predetermined and becomes out of range. Said local medical-examination facility While connecting with always thru/or at any time through said each dialysis device and wireless thru/or a general public line, etc. A junction transceiver means to deliver the directions information data from a central-control facility etc. to each patient's dialysis device while always connecting with a high-throughput telecom network and delivering the received various detection data information to a central-control facility, It has the secondary-storage means which carries out filing storing of the information received from each dialysis device thru/or a central-control facility according to an individual, the medical equipment which can perform a medical checkup of a patient. To this medical equipment While being able to ***** a opinion for said secondary-storage means, said junction transceiver means is minded. The input/output terminal which can transmit this opinion information to each patient's dialysis device thru/or central-control facility, or can peruse the various information stored in the central-control facility is prepared. Furthermore, a transceiver means by which said central-control facility transmits and receives information between said local medical-examination facilities through a high-throughput telecom network, An assessment parameter calculation means to compute an assessment parameter etc. based on this receipt information, The personal data base which carries out filing storing of the inspection information of the individual containing these calculation data with the medical-examination information about past treatment hysteresis, a past opinion, etc., The disease information database which accumulated the information about predetermined diseases, such as renal failure, The condition judging EKUSU PERT subsystem which judges a patient's condition based on the necessary individual humanity news and the disease information which were pulled out from these databases, The management programming subsystem which creates a future management program based on a judgment result, When this management program is outputted to the terminal of the right person of acknowledgement and an acknowledgement input is obtained from this ** person, this management program is determined. The home peritoneal dialysis therapy managerial system characterized by having at least a management program acknowledgement means to output the necessary command to a related device etc. according to the management program this determined while adding a postscript to the treatment hysteresis of a personal data base. [Claim 3] The home peritoneal dialysis therapy managerial system according to claim 2 characterized by containing at least one or more sorts in an urea

nitrogen (UN), a creatinine (Creat), a glucose (Glu), and a white blood cell count (WBC count) in the item inspected about said effluent.

[Claim 4] This urinalysis means is a home peritoneal dialysis therapy managerial system according to claim 2 or 3 which is the thing which is further equipped with a urinalysis means, and by which at least one or more sorts of items are inspected among the urea nitrogen in urine volume and urine (UN), and a creatinine (Creat).

[Claim 5] It has a blood test means further. A white blood cell count (WBC count), hemoglobin (Hb), A platelet (Plt), hemato KUTTO (Hct), Lynn (iP), calcium (calcium), Sodium (Na), a potassium (K), the crawl (Cl), blood sugar (BS), claims 2-4 which are what inspects at least one or more sorts of items among albumin (Alb), serum urea nitrogen (BUN), a creatinine (Creat), and a uric acid (UA) — a home peritoneal dialysis therapy managerial system any or given in 1 term.

[Claim 6] The home peritoneal dialysis therapy managerial system of claim 2-5 characterized by including at least one or more items in the personal data inputted from the input/output terminal of each dialysis device among data, such as blood pressure, activity dialysing fluid glucose concentration, urine volume, weight, and height, given in any 1 term.

[Claim 7] It is the home peritoneal dialysis therapy managerial system of claims 3-6 characterized by surely inspecting the item of a creatinine (Creat) and an urea nitrogen (UN) about an effluent and urine given in any 1 term.

[Claim 8] The assessment parameter in said assessment parameter calculation means The amount parameter of dialysis (weekly Ccr, weekly Kt/V), The amount of dewatering (D/D0 (4hr value), the amount of dewatering in 2.5% glucose liquid activity), They are a calcium phosphorus product and an effluent white blood cell count (WBC),, respectively It is what is computed by the following (1) – (5) type. The value of each assessment parameter Claim 6, the home peritoneal dialysis therapy managerial system of seven given in any 1 term which are characterized by being the dialysis monitor means which emits an alarm when it deviates from the range more than 2.0 or less, 0.2 or less, 400ml or less, 55 or less, and 100/mul below 60L, respectively.

(1) $\text{weeklyCcr} = 7 * \{ \text{---} \} * 1.73 / 0.007184 * (\text{weight kg}) 0.425 * \text{height (cm)}$
(2) $0.725 \text{ weekly } ((\text{UN}) \text{ UN} * \text{urine volume} / \text{blood serum of urinary Creat concentration} * \text{urine volume} / \text{serum creatinine} + \text{urine}) / 2 \text{ the amount of Creat concentration} * \text{effluents in } +\sigma \text{ effluent} / \text{serum creatinine concentration}$ $\text{Kt/V} = 7 * (\text{a urinary urea the amount of UN} * \text{effluents in a concentration} + \sigma \text{ effluent} / \text{blood serum UN}) / \text{A or BA}$: Male $= 2.447 + 0.3362 * (\text{weight kg}) + 0.1074 * (\text{height cm}) - 0.09516 * \text{age (talent)}$
Woman = B: $-2.097 + 0.2466 * \text{weight (kg)} + 0.1069 * \text{height (cm)}$ (3) Amount D/D0 of dewatering (4hr) Amount = effluent bag weight-dialysing fluid

reservoir bag weight of dewatering (5) calcium phosphorus product = $(4-Alb) + 2\text{calcium}(\text{mg/dl}) \times iP$ according the inside of an after [=4hr] effluent to a glucose concentration / activity dialysing fluid glucose concentration (4)4% glucose liquid 4 hour activity () [if] Alb ≤ 4.0 , or $\{Alb + 2\text{calcium}(\text{mg/dl})\} \times iP$ [Claim 9] (if Alb > 4.0) A dialysing fluid feeding-and-discarding means to have the function which pours in dialysing fluid and is discharged after predetermined time progress on the directed conditions, An amount detection means of effluents to detect the amount of effluents discharged from the abdominal cavity, a concentration detection means to detect the concentration of the various components in an effluent, A primary storage means to store various constituent concentration data temporarily with dialysing fluid feeding-and-discarding data, A setting-out modification means to change setting out of a dialysing fluid feeding-and-discarding means etc. based on presenting of the directions information from a transmitting means and a local medical-examination facility thru/or directions information that the stored data are transmitted, The peritoneal dialysis device which can install the dialysis monitor means which emits an alarm when the assessment parameter calculation means and each assessment parameter which compute an assessment parameter based on said data judge whether it is within the limits of predetermined and become out of range in the home which it had at least.

[Claim 10] The peritoneal dialysis device according to claim 9 characterized by containing at least one or more sorts in an urea nitrogen (UN), a creatinine (Creat), glucose concentration (Glu), and a white blood cell count (WBC count) in the item inspected about said effluent.

[Claim 11] This urinalysis means is a peritoneal dialysis device according to claim 9 or 10 which is the thing which is further equipped with a urinalysis means, and by which at least one or more sorts of items are inspected among the urea nitrogen in urine volume and urine (UN), and a creatinine (Creat).

[Claim 12] It has a blood test means further. A white blood cell count (WBC count), hemoglobin (Hb), A platelet (Plt), hemato KUTTO (Hct), Lynn (iP), calcium (calcium), Sodium (Na), a potassium (K), the crawl (Cl), blood sugar (BS), claims 9-11 which are what inspects at least one or more sorts of items among albumin (Alb), serum urea nitrogen (BUN), a creatinine (Creat), and a uric acid (UA) — a peritoneal dialysis device any or given in 1 term.

[Claim 13] The peritoneal dialysis device of claim 9-12 characterized by including at least one or more items in the personal data inputted from the input/output terminal of each dialysis device among data, such as blood pressure, activity dialysing fluid glucose concentration, urine volume, weight, and height, given in any 1 term.

[Claim 14] The home peritoneal dialysis therapy managerial system of claim

2-8 characterized by equipping a central-control facility with the doctor-in-charge quota subsystem which determines each doctor's in charge person-on-duty area medical-examination facilities further according to each patient's periodic medical examination thru/or an extraordinary medical checkup schedule, and a doctor's in charge important point transit time given in any 1 term.

[Claim 15] With said condition judging EKUSU PERT subsystem and a treatment policy decision EKUSU PERT subsystem When treatment policies, such as an important point close examination, important point hemodialysis, or an important point hospitalization therapy, are outputted and the input of acknowledgement decision is made by the right person of acknowledgement Claims 2-8 characterized by having further the reservation management subsystem which performs necessary reservation of a close examination or hemodialysis thru/or hospitalization, etc. to a local medical checkup facility thru/or a special research facility, or a neighboring local dialysis hospital, and the home peritoneal dialysis therapy managerial system of 14 given in any 1 term.

[Claim 16] While delivering the dialysing fluid specified as the local medical checkup facility by the management program to each patient's home, when the need for precision analysis arises, an effluent, The specimen which this collected specimens, such as urine, toward collection to each patient's home Claims 2-8, the home peritoneal dialysis therapy managerial system of 14 and 15 given in any 1 term which are characterized by having further the physical-distribution-management subsystem which manages the PD schedule of delivering to special research facilities, such as a university, with the transport means containing a high-speed means of transportation.

[Claim 17] A central-control facility is accessed periodically [the storage means of each dialysis device, an every place region medical-examination facility, and another relation device] thru/or irregularly. When the information corresponding to the storage information on the personal data base of a central-control facility is called, the content of storage is collated and all are not in agreement Claims 2-8, the home peritoneal dialysis therapy managerial system of 14-16 given in any 1 term which are characterized by being what is further equipped with the content alignment subsystem of storage which has the function to make the information which is not in agreement on the basis of the newest information update.

[Claim 18] Said peritoneal dialysis is claims 2-8 characterized by being continuous peritoneal dialysis (CAPD), and the home peritoneal dialysis therapy managerial system of 14-17 given in any 1 term.

[Claim 19] Said peritoneal dialysis is the peritoneal dialysis device of claim 9-13 characterized by being continuous peritoneal dialysis (CAPD) given in any 1 term.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the peritoneal dialysis (PD:peritoneal dialysis) managerial system by being home especially about the therapy managerial system by being home.

[0002] the continuous peritoneal dialysis (CAPD) to which the peritoneal dialysis performed now is carried out manually here -- the self-sustaining cycle peritoneal dialysis (CCPD) which uses a machine together with law -- law and night -- intermittent peritoneal dialysis (NIPD) -- although divided roughly into law, this invention is a peritoneal dialysis managerial system applicable to any of the dialysis. Furthermore, it is related with the unitary managerial system of the periodic diagnosis by the peritoneal dialysis by being home, and going to hospital regularly, and the emergency organization at the time of condition sudden change.

[0003]

[Description of the Prior Art] A chronic-renal-failure patient requires usually undergoing the hemodialysis of about 4 hours once 3 times per week. In this hemodialysis, makeup of the clearance and the need solute of an unnecessary solute and dewatering of unnecessary moisture are performed by carrying out matter exchange of the patient blood which carried out extracorporeal circulation, and the dialysing fluid through the film in the dialyzer called a dialyzer (dialyzer). However, since a large-scale facility of a dialysing fluid distribution system, a patient-monitoring monitor system, etc. is required in order to enforce hemodialysis, in order to undergo a hemodialysis therapy, going to hospital regularly is unescapable and, moreover, serves as a burden considerable for a patient from the time amount which the frequency and dialysis take.

[0004] On the other hand, the peritoneal dialysis method besides the above-mentioned hemodialysis method is also learned by the dialysis

treatment method. This peritoneal dialysis method is a cure which performs makeup of the clearance and the need solute of an unnecessary solute, such as using a patient's own peritoneum who is a biomembrane as permeable membrane, and leaching wastes in blood, such as low-molecular metabolite, such as a urea, a creatinine, and a uric acid, in dialysing fluid with osmotic pressure through the process which intraperitoneal is made to carry out fixed time amount stagnation, and carries out the after [a fixed time amount reservoir] effluent of the dialysing fluid to it, and dewatering of unnecessary moisture.

[0005] Since this peritoneal dialysis method does not require a large-scale facility like hemodialysis, it makes dialysis treatment by being home possible. It is effective also in the patient who has a problem in dialysis difficult [especially continuous peritoneal dialysis (CAPD) has little the burden and risk for a patient since it is the gradual cure which performs liquid-storage of 4 – 8 hours 3 to 4 times per day once, and enforces this continuously and] ** since a shunt moreover is not needed, or blood access, and just going to wait for much more spread.

[0006] Thus, peritoneal dialysis (PD) is compared with hemodialysis, there are few time / corporal burdens, and excelling in residual kidney function maintenance of a renal failure patient as further advantage is mentioned. For this reason, it is thought that a peritoneal dialysis therapy is ideal as a preservation term renal failure therapy. Moreover, considering aging (the majority being 60 or more years old) of a dialysis patient in recent years, establishment of a home therapy which can feel easy rather than going to hospital regularly is desired, and the spread of the peritoneal dialysis (PD) of being home is expected.

[0007] However, in spite of the terminal renal failure dialysis patient in our country going up to current [200,000] and enhancing the increment at 10,000 or more paces per year It does not pass over the patient who is undergoing peritoneal dialysis (PD) to 5% of the whole (moreover, 70% is a university, the macrochiria municipal hospital, etc. among these, and the diffusion rate to the general hospital is very low), but the rate of the actual condition is still low as compared with it of hemodialysis. This is considered to originate in the social capital which supports it not being fixed in addition to the simple and safe peritoneal dialysis (PD) device which is sufficient for performing home dialysis treatment by the patient without a know how itself not being offered.

[0008] For example, it is suitable to perform domiciliary treatment to JP,6-154314,A, and although the automatic peritoneal dialysis equipment which can perform dialysis treatment safely certainly is indicated, it does not pass to the equipment which performs automatically 1 time of 1-time dialysis processes, such as impregnation of dialysing fluid and blowdown, but is hard

to say that it is sufficient equipment which is sufficient for continuing at a long period of time and continuing dialysis treatment.

[0009] On the other hand, although the remote medical treatment care support system is indicated for 24 hours which made the system which shares the information transfer system to a medical practitioner etc., and an in-home patient's etc. information from an in-home patient etc. cooperate so that advice the the best for JP,2000-194789,A for an in-home patient etc. and quick may be obtained, it does not pass to the mere home care system which is not a thing supposing domiciliary treatment, and the dialysis treatment by being home does not become possible by application of this system.

[0010] more than -- a passage -- insurance -- simplicity -- and -- a long period of time -- being home -- depending -- dialysis treatment -- wishing -- a patient -- for -- said -- existing -- a dialyzer -- and -- a support system -- at all -- being able to be satisfied -- a thing -- it is not -- as -- being suitable -- crisis management -- having excelled -- being special -- peritoneal dialysis -- (-- PD --) -- a therapy -- carrying out -- a sake -- a patient -- a condition -- real time -- grasp - management -- carrying out -- being suitable -- a guide -- showing -- being useful -- a system -- the actual condition -- *** -- not existing -- new -- a system -- construction -- wishing -- having -- *** -- .

[0011] The social system which unifies special research facilities, such as above each stand-alone treatment technique, and general-purpose not a home care system but domiciliary treatment device, a local clinic, a local dialysis hospital, and a university, and supports the substantial domiciliary treatment is indispensable. If the organization which can receive in insurance the peritoneal dialysis therapy which can undergo dialysis treatment by such being home is ready, it is certain for the burden accompanying a therapy to be mitigated and to become good news for chronic-disease patients who need the therapy by being home, such as diabetics including a renal failure patient.

[0012] In addition, although considered a morphological cure with peritoneal dialysis temporary since progress (for example, vascular proliferation, sthenia of blood vessel permeability) of functional change causes a dewatering malfunction etc. and it is obliged to the shift to hemodialysis for the peritoneum by long-term continuation of peritoneal dialysis, the cause is being solved by research by these artificers, and, moreover, morphological and the approach of checking progress of functional change effectively of the peritoneum are also established.

[0013] Therefore, it counts upon amplification with the user of a peritoneal dialysis method rapid to it since the probability of peritoneal dialysis (PD) escaping from the region of a temporary cure, and acquiring a position as a

long period of time and a permanent cure is high to ** by which these techniques were established, and is sure that maintenance of the social capital coping with the expansion of this peritoneal dialysis method user is becoming the important technical problem which requires urgent urgency.

[0014]

[Technical Problem(s) to be Solved] Peritoneal dialysis (PD) therapies differ in said dialyzer of hemodialysis etc. as above-mentioned, miniaturization of dialysis equipment and materials is possible, and since the actuation is also simple, the patient itself is able to dialyze at home by some training enough.

[0015] however, a patient -- on the other hand, in the case of the dialysis treatment by being home, it will be necessary to change various dialysis conditions by making dialysing fluid concentration to be used into the start by that the unexpected situations, such as an infectious disease and blinding in a catheter, occur, and fluctuation of a peritoneum condition with time etc. -- it is not rare to face the situation where it cannot be coped with only by the principal.

[0016] It is in offering the general-purpose home managerial system which can also cope with this abnormality situation and is represented by the unitary management organization of the peritoneal dialysis therapy for covering simplicity and insurance at a long period of time, and making dialysis treatment by being home possible at them, this invention cooperating with a doctor in charge, a local dialysis hospital, etc. based on the actual condition involving such peritoneal dialysis.

[0017]

[The means which should solve a technical problem] The outline of the system concerning this invention A treatment device, a local medical-examination facility, and a central-control facility, It is the domiciliary treatment managerial system which consists of an information communication network to which they are connected. While transmitting a medication means to medicate a patient with drugs on the directed conditions, a detection means to detect the symptom at the time of medication, a primary storage means to store with the treatment conditions on which detection data were directed serially, and the stored detection data A transceiver means to receive the directions information from a local medical-examination facility etc., a setting-out modification means to change setting out of a medication means etc. based on the directions information from a local medical-examination facility, An assessment parameter calculation means to compute the assessment parameter by which a therapy situation is evaluated based on the various detection data stored in the primary storage means, Had at least the therapy monitor means which emits an alarm etc. when an assessment parameter judges whether it is within the limits of predetermined and becomes out of range. The treatment device

which can be installed in a home, and said local medical-examination facility While connecting with always thru/or at any time through said treatment device and wireless thru/or a general public line, etc. A junction transceiver means to deliver the directions information data from a central-control facility etc. to each patient's dialysis device while always connecting with a high-throughput telecom network and delivering the received various detection data information to a central-control facility, It has at least the secondary-storage means which carries out filing storing of the information received from each treatment device thru/or a central-control facility according to an individual, the medical equipment for performing a diagnosis of a patient, etc. to this medical equipment While being able to ***** a opinion for said secondary-storage means, said junction transceiver means is minded. The input/output terminal which can transmit this opinion information to each patient's dialysis device thru/or central-control facility, or can peruse the various information stored in the central-control facility is prepared. Furthermore, a transceiver means by which said central-control facility transmits and receives information between said local medical-examination facilities through a high-throughput telecom network, An assessment parameter calculation means to compute an assessment parameter etc. based on this receipt information, The personal data base which carries out filing storing of the inspection information of the individual containing these calculation data with the medical-examination information about past treatment hysteresis, a past opinion, etc., The condition judging EKUSU PERT subsystem which judges a patient's condition based on the necessary individual humanity news and the disease information which were pulled out from the disease information database which accumulated the information about a predetermined disease, and these databases, The management programming subsystem which creates a future management program based on a judgment result, When this management program is outputted to the terminal of the right person of acknowledgement and an acknowledgement input is obtained from this ** person, this management program is determined. While adding a postscript to the treatment hysteresis of a personal data base, it is the domiciliary treatment managerial system characterized by having a management program acknowledgement means to output the necessary command to a related device etc. according to the this determined management program, at least.

[0018] Moreover, optimal Field of application of the domiciliary treatment managerial system of this invention It is a peritoneal dialysis therapy by being home. The outline It is the home peritoneal dialysis therapy managerial system which consists of an information communication network which connects them to a peritoneal dialysis device, a local medical-examination facility, and a central-control facility. Said dialysis device A dialysing fluid

feeding-and-discard means to have the function which pours in dialysing fluid and is discharged after predetermined time progress on the conditions possible [at a home] and directed, An amount detection means of effluents to detect the amount of effluents discharged from the abdominal cavity, a concentration detection means to detect the concentration of the various components in an effluent, The input/output terminal which can input the personal data about a patient or can peruse the various information to need, A primary storage means to store said various detection data and personal data with dialysing fluid feeding-and-discard data, A transceiver means to receive the directions information from a local medical-examination facility etc. while transmitting the stored data to a local medical-examination facility etc., A setting-out modification means to change setting out of a dialysing fluid feeding-and-discard means etc. based on the directions information from a local medical-examination facility, An assessment parameter calculation means to compute an assessment parameter based on the various detection data stored in said primary storage means, It has at least the dialysis monitor means which emits an alarm etc. when each assessment parameter judges whether it is within the limits of predetermined and becomes out of range. Said local medical-examination facility While connecting with always thru/or at any time through said each dialysis device and wireless thru/or a general public line, etc. A junction transceiver means to deliver the directions information data from a central-control facility etc. to each patient's dialysis device while always connecting with a high-throughput telecom network and delivering the received various detection data information to a central-control facility, It has the secondary-storage means which carries out filing storing of the information received from each dialysis device thru/or a central-control facility according to an individual, the medical equipment which can perform a medical checkup of a patient. To this medical equipment While being able to ***** a opinion for said secondary-storage means, said junction transceiver means is minded. The input/output terminal which can transmit this opinion information to each patient's dialysis device thru/or central-control facility, or can peruse the various information stored in the central-control facility is prepared. Furthermore, a transceiver means by which said central-control facility transmits and receives information between said local medical-examination facilities through a high-throughput telecom network, An assessment parameter calculation means to compute an assessment parameter etc. based on this receipt information, The personal data base which carries out filing storing of the inspection information of the individual containing these calculation data with the medical-examination information about past treatment hysteresis, a past opinion, etc., The disease information database which accumulated the information about predetermined diseases,

such as renal failure, The condition judging EKUSU PERT subsystem which judges a patient's condition based on the necessary individual humanity news and the disease information which were pulled out from these databases, The management programming subsystem which creates a future management program based on a judgment result, When this management program is outputted to the terminal of the right person of acknowledgement and an acknowledgement input is obtained from this ** person, this management program is determined. [0019] which is the home peritoneal dialysis therapy managerial system thing characterized by having at least a management program acknowledgement means to output the necessary command to a related device etc. according to the management program this determined while adding a postscript to the treatment hysteresis of a personal data base On the other hand, it becomes it is possible to, equip this domiciliary treatment managerial system with the content alignment subsystem of storage which measures informational share-ization in a doctor-in-charge quota subsystem, a reservation management subsystem, the organs concerned, etc. further in addition to this, and possible to raise a patient's convenience further by adding these subsystems etc.

[0020]

[Embodiment of the Invention] In the domiciliary treatment managerial system concerning this invention, if weight, height, etc. carry out even a personal entry of data in part The assessment parameter which starts a therapy almost in full automatic is computed. Moreover, inspection data various [these] Referring to the database about a disease based on the individual humanity news which it was serially told to the local medical checkup facility and the central-control facility through communication technology, and individual inspection hysteresis was managed, and added a commuter's ticket, the opinion information of the medical practitioner by irregular medical checkup, etc. When the optimal occasional therapy conditions various [the], such as selection of dialysing fluid concentration and a judgment of the need for hemodialysis, are outputted and the approval of a medical practitioner is acquired to this output Reservation of hemodialysis and arrangement of direct hospital admission of emergency can be outputted to the delivery to patient's home of proper dialysing fluid, a neighboring hospital, etc. that this therapy should be carried out.

[0021] Thereby, it becomes possible each patient not only can to check that own home dialysis treatment is advancing proper, but to continue, to feel easy about a long period of time, and to continue domiciliary treatment, since directions of the therapy which suited condition transition are given from a central-control facility.

[0022] On the other hand, the share of the accumulated information, such as detection data and therapy hysteresis, is carried out between the local

medical checkup facility for which everything but the bottom of privacy management and a central-control facility is needed through communication technology, a neighboring hemodialysis hospital, special research facilities, etc., and it becomes possible to draw altitude and a special diagnosis further after that a doctor in charge and a specialist talk.

[0023] And as soon as the fine therapy program based on this diagnosis is outputted automatically and the approval of a medical practitioner etc. is acquired, the procedure needed for the organs concerned etc. is directed and the concrete terms and conditions of system ends including domiciliary treatment conditions are also optimized real time.

[0024] Therefore, also in the various complicated procedures accompanying modification of therapy conditions, while a system comes to nurse trouble, the support of this system will be released from details procedures, such as arrangement operation of versatility other than a diagnosis also for a medical practitioner, and it not only can undergo the optimal domiciliary treatment safe [a patient] and simple, but it becomes possible [concentrating total energy on diagnostic operation purely].

[0025] Furthermore, the system of this invention realizes optimization of a human resource and PD migration while enabling an advanced information communication link by having installed the local medical-examination facility in the location which has the base of a connection point with a high-throughput telecom network, a passenger, and the PD.

[0026] It ** hereafter in the example which applied the system of this invention to the peritoneal dialysis therapy of being home, and the system further applied to a detail at this invention is explained.

[0027] In addition, although the case where this domiciliary treatment managerial system is applied to a peritoneal dialysis therapy is explained here, it cannot be overemphasized that it can apply to other chronic diseases, such as diabetes mellitus in which domiciliary treatment is possible.

[0028]

[Example] A. the whole system **** -- drawing 1 shows an outline for the overview of this domiciliary treatment managerial system first. A

central-control facility generalizes and manages all systems as this drawing.

[0029] And it divides into two or more areas based on main city A-E, and the local medical-examination facility which takes charge of each area is installed for every every place region. the patients a1-an to whom an every place region medical-examination facility lives in an every place region, and ... e1-en -- it takes charge of "". And this local medical-examination facility serves as a location which performs a patient's periodic medical examination etc.

[0030] As below-mentioned, carrier delivery of the information between each

patient and a central-control facility is easy for the location of this local medical-examination facility, it is the base of PD, such as drugs and a specimen, and the location where the facilities of traffic are good is further selected to going to hospital regularly of a patient or arrangement of a doctor in charge. A railroad station etc. is desirable and, specifically, a Shinkansen station is the optimal.

[0031] Since ultra high-speed and a mass optical-fiber information communication network are already fixed, the reason can be used for a railroad as a physical access point to this information communication network. Although it is desirable to establish a local medical-examination facility in a yard, when difficult, the building near the station is also available.

[0032] Moreover, by having prepared the local clinic linked to a ultra high-speed communication network for every every place region, the information communication link from each patient's home is enabled to carry out to always thru/or at any time cheap through the public line in wireless in the city thru/or the neighboring section etc., and it becomes possible to also aim at reduction of a system utilization costs burden.

[0033] Furthermore, if a local medical-examination facility can be opened a yard thru/or near the station, it is convenient also for the delivery to patient's home of need materials, such as conveyance to specialized agencies, such as dispatch of a doctor in charge and an effluent specimen, and dialysing fluid, not to mention going to hospital regularly of a patient's periodic medical examination etc.

[0034] In addition, the care can be requested, also when aiming at informational cooperation by connecting with said ultra high-speed communication network, enabling analysis of a specimen, and conference with a specialist and requiring a hemodialysis therapy also about related engines, such as specialized agency alpha-omega, such as a university, and local hemodialysis hospital I-X.

[0035] B. The functional diagram of the peritoneal dialysis device concerning this invention is shown in home continuation dialysis device drawing 2. This peritoneal dialysis device 1 is magnitude in which home installation is possible, and it can be desirable and it can be installed in the bed side etc. Moreover, although it is the the best for a continuous peritoneal dialysis (CAPD) therapy, it is applicable like other above-mentioned peritoneal dialysis therapies.

[0036] This peritoneal dialysis device has two or more dialysing fluid bags b1-bn, and supplies the dialysing fluid of the request of the bulbs v1-vn of the dialysing fluid bag of the directed conditions by open Lycium chinense.

[0037] Dialysing fluid is poured in into the body abdominal cavity 4 through a catheter 3, it is discharged after predetermined time progress, and this actuation of a series of is performed by the dialysing fluid

feeding-and-discard means. A detail is equipped with the dialysing fluid flow conduit 2, a catheter 3, the feeding-and-discard pump P, and effluent bag b', and a series of actuation is controlled by control unit CPU.

[0038] Furthermore, the fluid pressure detection means 5 besides the selection bulbs v1-vn of a dialysing fluid bag is formed in this dialysing fluid flow conduit 2 as above-mentioned. When abnormalities, such as blinding, occur in this directed dialysing fluid flow conduit 2 This fluid pressure detection means 5 detects the pressure fluctuation in the dialysing fluid flow conduit 2, and the below-mentioned dialysis monitor means 10 judges whether this pressure fluctuation is in an allowed value. in deviating from the allowed value range, while outputting the signal which judges it as the abnormalities in dialysis and directs a dialysing fluid negotiation for cutoff, a halt of the feeding-and-discard pump p, etc. on said bulb -- simultaneous -- alarm means, such as the below-mentioned display d, -- these abnormalities in dialysis -- a patient -- a principal etc. is told.

[0039] Various inspection means are formed in this continuation peritoneal dialysis device 1 besides the peritoneal dialysis function of these original, and it has to it an amount detection means 11 of effluents to specifically detect the amount of effluents discharged from the abdominal cavity, an effluent constituent concentration detection means 12 to detect the concentration of the various components in an effluent, the blood test means 13, and the various inspection means of urinalysis means 14 grade.

[0040] As an effluent component detected here An urea nitrogen (UN), a creatinine (Creat), They are at least one or more sorts in a glucose (Glu) and a white blood cell count (WBC count). As a urinalysis item They are at least one or more sorts of items among the urea nitrogen in urine volume and urine (UN), and a creatinine (Creat). Further as a blood inspection item A white blood cell count (WBC count), hemoglobin (Hb), a platelet (Plt), Hemato KUTTO (Hct), Lynn (iP), calcium (calcium), sodium (Na), They are at least one or more sorts of items among a potassium (K), the crawl (Cl), blood sugar (BS), albumin (Alb), serum urea nitrogen (BUN), a creatinine (Creat), and a uric acid (UA).

[0041] Moreover, it has the I/O means k which can input the personal data about a patient or can peruse the various information about the therapy to need, and at least one or more items are included as personal data inputted from this I/O means among data, such as blood pressure, activity dialysing fluid glucose concentration, urine volume, weight, and height. Preferably, according to the advice displayed on Display d, a figure etc. is only keyed. Moreover, when the inspection entry of data from other inspection equipment is required, it has the data input terminals i, such as a card reader and a card interface, so that it may bundle up by the memory card of a portable type etc. and data can be transported.

[0042] Furthermore, to this continuation peritoneal dialysis device 1, it has a function concerning information processing of preservation, processing, analysis, a communication link, etc. in said detection data etc. A primary storage means 6 to store said various detection data and personal data temporarily with dialysing fluid feeding-and-discriminating data, and the stored data are specifically transmitted. The directions data from a local medical-examination facility etc. A transceiver means 7 to receive, a setting-out modification means 8 to change setting out of a dialysing fluid feeding-and-discriminating means etc. based on the directions information from a local medical-examination facility, an assessment parameter calculation means 9 to compute an assessment parameter based on the various detection data stored in said primary storage means 6, When each assessment parameter judges whether it is within the limits of predetermined and becomes out of range, it has at least the dialysis monitor means 10 which emits an alarm.

[0043] Filing storing of said primary storage means is carried out with the assessment parameter of the after-mentioned [inspection data, dialysis conditions, etc.] according to each dialysis time, and various retrieval is attained.

[0044] Said transceiver means 7 is the means of communications the detected various inspection data, the inputted personal data, and for transmitting the information about an alarm etc. to a local medical-examination facility or a central-control facility, or consulting reverse further, in data, such as directions from a local medical-examination facility or a central-control facility. Specifically, the packet communication according to wireless when a local medical-examination facility is the neighborhood of patient's home, and the packet communication which used general public lines, such as the telephone line, when it was possible and the communication link by wireless was difficult are possible. Of course, being based on the Internet course is also possible.

[0045] In addition, as for a communication path, it is desirable that it is selectable by automatic thru/or hand control in two or more sorts of communication paths in consideration of the trouble and traffic situation of a circuit.

[0046] Said setting-out modification means 8 creates a feeding-and-discriminating schedule according to an individual life schedule, and it directs on the feeding-and-discriminating bulbs v1-vn, or it changes a feeding-and-discriminating schedule so that the dialysing fluid bags b1-bn of other concentration may be chosen while giving directions to the feeding-and-discriminating bulbs v1-vn and the feeding-and-discriminating pump p when directions of setting-out modification have been sent from a central-control facility in the amount of feeding and discriminating according to

it for example.

[0047] Said assessment parameter calculation means 9 computes the assessment parameter for [various] assessment which starts dialysis based on the various detection data stored in said primary storage means 6, and, specifically, computes the amount parameter of dialysis (weekly Ccr, weekly Kt/V), the amount of dewatering (D/D0 (4hr value), the amount of dewatering in 2.5% glucose liquid activity), and a calcium phosphorus product based on said each item. In addition, each above-mentioned assessment parameter is computed by the following (1) – (5) type, respectively.

(1) $\text{weeklyCcr} = 7 * (\text{UN} * \text{urine volume} / \text{blood serum UN of urinary Creat concentration} * \text{urine volume} / \text{serum creatinine} + \text{urine}) / 2$ amount of Creat concentration * effluents in σ effluent / serum creatinine concentration} It means that σ totals about all the effluents that are $*1.73 / 0.007184 * (\text{weight kg}) 0.425 * \text{height (cm)} 0.725$ and that were obtained during the 1st among a top type.

(2) $\text{weekly Kt/V} = 7 * (\text{urinary urea amount of UN} * \text{effluents in concentration} + \sigma \text{ effluent} / \text{blood serum UN}) / A$ or B : male $= 2.447 + 0.3362 * (\text{weight kg}) + 0.1074 * (\text{height cm}) - 0.09516 * \text{age (talent)}$

Woman = $B: -2.097 + 0.2466 * \text{weight (kg)} + 0.1069 * \text{height (cm)}$ (3) Amount = effluent bag weight-dialysing fluid reservoir bag weight of dewatering (5) calcium phosphorus product $= \{(\text{Alb} - 4) + 2\text{calcium(mg/dl)}\} * iP$ according to a glucose concentration / activity dialysing fluid glucose concentration (4) 4% glucose liquid 4 hour activity the inside of an after [amount D/D0 dewatering 0(4hr) = 4hr] effluent (if $\text{Alb} \leq 4.0$) and or $\{\text{Alb} + 2\text{calcium(mg/dl)}\} * iP$ (if $\text{Alb} > 4.0$) [0048] the value (the amount parameter of dialysis (weekly Ccr, weekly Kt/V) --) of each assessment parameter with which said assessment parameter calculation means computed said dialysis monitor means The amount of dewatering (D/D0 (4hr value), the amount of dewatering in 2.5% activity), a calcium phosphorus product, and an effluent white blood cell count When it is in the range more than 2.0 or less, 0.2 or less, 400ml or less, 55 or less, and 100/mul below 60L, and it judges with dialysis advancing proper and one or more sorts of assessment parameters deviate from the proper range, respectively It judges with dialysis not being proper and an alarm is emitted. In addition, it can judge similarly that it is unusual about the pressure fluctuation by the blinding of the above-mentioned dialysing fluid flow conduit, and an alarm can be emitted.

[0049] C. A local medical-examination facility area medical-examination facility is an engine which carries out the commuter's ticket of the patient in the area in his duty thru/or an irregular medical checkup, and as above-mentioned, each patient is convenient to *** and is installed in locations, such as a station always connectable with a high-throughput telecom network. It connects with always thru/or at any time through wire

circuits, such as a dialysis device of patient each, wireless, or a telephone which lives in the area in its duty, etc. and on the other hand It has connected with communication networks, such as an optical cable in which ultra high-speed and mass information transfer are always possible. A junction transceiver means to deliver data, such as directions information from a central-control facility, to each patient's dialysis device while delivering the various detection data received from the patient side to a central-control facility, It has the secondary-storage means which carries out filing storing of the information received from each dialysis device thru/or a central-control facility according to an individual, and the various medical equipment which can perform a medical checkup of a patient. To this medical equipment While being able to ***** a opinion for said secondary-storage means, said junction transceiver means is minded. The input/output terminal which can transmit this opinion information to each patient's dialysis device thru/or central-control facility, or can peruse the various information stored in the central-control facility is prepared. The input of a commuter's ticket thru/or the opinion of an irregular medical checkup is possible, and read-out becomes possible from special research facilities, such as a central-control facility and a university, etc. about mass image data, such as a thorax roentgen, an electrocardiogram, a supersonic wave, and CT, using said ultra high-speed and a large-capacity communications network.

[0050] In addition, since a local medical-examination facility is installed in a yard etc., when becoming possible [also conveying a specimen etc. to a high specialized agency at high speed], the doctor in charge of the need for a resident is also lost by high-speed transport of a passenger, and it becomes possible to dispatch a doctor in charge according to a patient's consultation schedule.

[0051] Thus, while leaving inspection and the therapy which require a large-scale facility by taking the location which enables high-speed communication link and high-speed transport to other engines and aiming at relief of a facility, effective arrangement of talented people is enabled.

[0052] D. A central-control facility central-control facility has the system configuration shown in drawing 3 . Between said local medical-examination facilities, it has said transceiver means 102 *****, and transmit and receive various data, and it has an assessment parameter calculation means compute the information sent from a local medical-examination facility for an assessment parameter etc. based on receipt information, and it has the personal data base 104 which carries out filing storing of the inspection information of the individual containing these calculation data with information, such as the past treatment hysteresis and a opinion, and it has the disease information database 105 accumulated the information about

renal failure at one side.

[0053] It has the condition judging EKUSU PERT subsystem 103 which judges a patient's condition based on the necessary individual humanity news and the disease information which were pulled out from these databases 104,105. The same assessment parameter as the assessment based on the assessment parameter in the above-mentioned dialysis device is used.

[0054] Generally the Lynn concentration (iP) and calcium concentration (calcium) among blood inspection items Since it is the important parameter of arteriosclerosis progress, a monitor is required about especially the transition. Moreover, serum urea nitrogen (BUN), a creatinine (Creat), and a uric acid (UA) It becomes important for the judgment of a uremia condition like [the urea nitrogen (UN) of an effluent inspection item, and a creatinine (Creat) list] the urea nitrogen (UN) of a urinalysis item, and a creatinine (Creat). Furthermore, it is known that a glucose (Glu) will become assessment of dewatering ability among effluent inspection items, and a white blood cell count (WBC Count) will, on the other hand, serve as the best index of the onset of peritonitis.

[0055] therefore, in the condition judging EKUSU PERT subsystem 104 of this invention It computes [the newest dialysis result] from the past of the above-mentioned assessment parameter. By the comparison with the transition hysteresis of each assessment parameter, and the standard transition inclination of an assessment parameter The routine 103-1 which reasons transition of a future assessment parameter, and the data about the blood pressure till then are read. The past blood-pressure transition, With the standard transition inclination data about blood-pressure hysteresis, further The edema of a leg, It has the routine 103-2 which carries out assessment inference of the future elevation of blood pressure from the input existence of the opinion about jugular vein engorgement, deletion venous pressure, etc. Based on the output of both [these] routines, the condition of the patient who performs prediction of future arteriosclerosis progress, prediction of the onset of uremia, prediction of dewatering ability lowering, etc. is judged.

[0056] Furthermore, it is the management programming EKUSU PERT subsystem 106 for searching for automatically the management program more nearly optimal than the condition judging EKUSU PERT subsystem 104 when various indications are outputted.

[0057] For example, while directing an extraordinary medical checkup to a patient or directing the direct hospital admission of emergency to a regional hospital to a patient since we are anxious about uremia or the onset of peritonitis when lowering of Kt/Vurea and lifting of a white blood cell count are predicted among assessment parameters, to a local medical-examination facility or a regional hospital, a management program, such as performing

reservation of an extraordinary medical checkup and arrangement of direct hospital admission of emergency, is created.

[0058] moreover, when the indication in short of dewatering is outputted as above-mentioned The existence of the need for an occasional survey is judged based on extent of this lack of dewatering, and progress prediction of the lack of dewatering of future. And the adoption or rejection of the dialysing fluid glucose concentration for a dewatering ability consolidation, reservoir time amount, or the concomitant use approach of SAIKURA is reasoned. A necessary management program, such as delivering the dialysing fluid of the setting-out concentration which was changed [directions and] in the set point of the setting-out modification means in the peritoneal dialysis device of the patient concerned, and was computed by the patient to the patient's home concerned, is created.

[0059] When the created management program is outputted to the terminal of the right person of acknowledgement etc. and an acknowledgement input is obtained from this ** person, immediately, while a postscript is added to the treatment hysteresis of a personal data base 104, according to this management program, a command etc. is outputted to a related device etc., and this management program is promptly told by the transceiver means 102 which is the communication facility of a system.

[0060] In addition, special research-facilities alpha-omega, such as this central-control facility 101 and a university Always connect with said high-throughput telecom network, and the demand of the normal from the doctor in charge of local medical-examination facility A-N or the specialist of special research-facilities alpha-omega is accepted. the individual humanity news stored in said database -- said local medical-examination facility A-N -- minding -- each device thru/or a patient -- it has the function transmitted and received to a principal and an authorized-personnel terminal, and data, such as a mass image, can be shared among authorized personnel.

[0061] E. other subsystems -- with said others and condition judging EKUSU PERT subsystem 103 and the management programming EKUSU PERT subsystem 106 [these] When management programs, such as an important point close examination, important point hemodialysis, or an important point hospitalization therapy, are outputted and the input of acknowledgement decision is made by the right person of acknowledgement It is desirable to have further the reservation management subsystem which performs necessary reservation of a close examination or hemodialysis thru/or hospitalization, etc. to local medical checkup facility A-N thru/or special research facility alpha-omega, or neighboring local dialysis hospital I-X.

[0062] Moreover, while delivering the dialysing fluid specified as local medical-examination facility A-N by the management program to each patient's home, when the need for precision analysis of specimens, such as

an effluent and urine, arises, it is desirable to have further the physical-distribution-management subsystem which manages the PD schedule of delivering the specimen collected toward collection to each patient's home to special research-facilities alpha-omega, such as a university.

[0063] Furthermore, a central-control facility is accessed periodically [the storage means of each dialysis device, an every place region medical-examination facility, and another relation device] thru/or irregularly. When the information corresponding to the storage information on the personal data base of a central-control facility is called, the content of storage is collated and all are not in agreement It is desirable to have further the content alignment subsystem 107 of storage which has the function to make the information which is not in agreement on the basis of the newest information update.

[0064]

[Effect of the Invention] While this invention installs a local medical-examination facility in an easy and location connectable with a high-throughput telecom network and a patient's access and the PD of need materials use it as delivery facilities, such as everyday domiciliary treatment information on a domiciliary treatment device, as above It is the home managerial system which makes insurance and simple domiciliary treatment possible by using as a location which performs fixed medical examination etc., using also for collection and delivery of need drugs or a specimen further, and carrying out unitary management of special medical machine Seki, such as an in-home patient and a university, as a result the local dialysis hospital, etc. further.

[0065] At this point, there is a difference with marked conventional peritoneal dialysis equipment, conventional home care system, etc. namely, -- the home peritoneal dialysis therapy managerial system applied to this invention compared with the patient having been obliged to the therapy in unsuitable conditions to the next close examination with conventional peritoneal dialysis equipment since with-time condition fluctuation could not be caught by the therapy device which supervises only the negotiation condition of dialysing fluid even if the abnormalities in dialysis of an individual time were detectable -- positively -- texture -- a warm therapy is attained. On the other hand, it does not stop at the care in a general-purpose home care system, but it is the point which enabled operation of proper and long-term domiciliary treatment, and remarkable effectiveness is demonstrated.

[0066] Furthermore, this invention is a general-purpose domiciliary treatment managerial system applicable also to various domiciliary treatment with the need of it not being limited to the peritoneal dialysis therapy indicated in said

example, but conducting medication and inspection including a diabetes-mellitus therapy at home.

[Translation done.]

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
3. In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

Drawing 1] The whole domiciliary treatment managerial system explanatory view concerning one example of this invention

Drawing 2] Functional description drawing of the continuation peritoneal dialysis device concerning one example of this invention

Drawing 3] The outline explanatory view of the central-control facility concerning one example of this invention

[Description of Notations]

1 Body of Continuation Peritoneal Dialysis Device

b1-bn Dialysing fluid bag

v1-vn Bulb

2 Dialysing Fluid Flow Conduit

p Feeding-and-discriminating pump

3 Catheter

4 Body (Abdominal Cavity)

5 Fluid Pressure Detection Means

cpu Control unit

6 Primary Storage Means

7 Transceiver Means (Dialysis Device)

8 Setting-Out Modification Means

9 Assessment Parameter Calculation Means

10 Dialysis Monitor Means

b' Effluent bag

11 The Amount Detection Means of Effluents

12 Effluent Constituent Concentration Detection Means

13 Blood Test Means

14 Urinalysis Means

15 Blood-Pressure-Measurement Device

16 Urine Volume Detection Device

d A display / alarm means

k Keyboard

i Interface

101 Central-Control Facility

A-N Local medical-examination facility

Alpha-omega Special research facilities, such as a university

I-X Local dialysis hospital

CPU Information management host operation part

102 Transceiver Means

103 Condition Judging EKUSU PERT Subsystem

103-1 Assessment Parameter Prediction Routine

103-2 Elevation-of-Blood-Pressure Prediction Routine

104 Personal Data Base

105 Disease Information Database

106 Management Programming Subsystem

107 Individual Humanity News Alignment Subsystem

[Translation done.]